

Duro Textiles LLC, Duro Textile Printers, Industrial Wastewater Pretreatment Systems (IWPS)

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Description of the principle treatment processes

IWPS # 1 (see IWPS Diagram) serves to control pH of wastewater flow from the Dyehouse, Washers # 1 and #2 and the Saturator. This system is designed to adjust the high or low pH waste stream with the addition of sulfuric acid or the addition of high pH solution from the 1000 gallon Saturator Pit. The system flow is as follows:

1. Wastewater from Washers #1 and #2 is filtered in the Lint Filter (Kemco Model 200 Rotary Screen Unit) and then flows to the 2000 gallon Acid/Caustic Pit. Wastewater from the Dyehouse also flows to the Acid/Caustic Pit.
2. The pH Controller (GLI International Model P53) controls the addition of high pH solution from the 1000 gallon Saturator Pit to the Acid/Caustic Pit via pumps (Liberty Process model AP4455BM, 10 gpm) in the Saturator Pit, or the pH controller may call for sulfuric acid to flow through a proportion operated valve (Valvecon model cs300wce, 1 inch) into the Acid/Caustic Pit. An air distribution system utilizes the plant compressor to mix the wastewater in this pit.
3. Wastewater then flows to a 750 gallon Manhole Pit then to the sewer outlet where effluent pH is monitored and recorded. An alarm signals the operator in boiler room when pH rises above 11 or drops below 5.8.

IWPS #2 (see IWPS Diagram) serves to control the pH of wastewater flow from the Finishing Department. This is a batch flow system. This system is designed to adjust the low pH waste stream to a higher pH with the addition of caustic soda. The system flow is as follows:

1. Wastewater from the Finishing Department flows to the Finishing Pit (16"X16"X20"). A pH probe in the pit signals the controller unit (Walchem Model W-130-Ph14) to control the addition of caustic. An LMI Chemical Pump (30 gal/day capacity) pumps caustic soda from the Caustic Drum (55 gallon) to the Finishing Pit. The controller maintains a pH of above 6 in the pit.
2. Wastewater flows from Finishing Pit via gravity feed to the Manhole Pit then to effluent discharge. An alarm signals the operator in boiler room when pH rises above 11 or drops below 5.8.